

In The Claims:

Claim 1. (cancelled)

Claim 2. (cancelled)

Claim 3. (currently amended) The apparatus for recycling slurry of claim 9 2,
wherein the slurry pump provides increased slurry pressure of at least 5 pounds per square inch.

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Claim 4. (original) The apparatus for recycling slurry of claim 3, wherein the slurry
pump provides a slurry flow rate of between about 0.4 and 2.0 liters per minute.

Claim 5. (currently amended) An The apparatus for recycling slurry used with an
edge-notch polishing apparatus of claim 1, further comprising:

a dirty slurry return conduit;

a first screen filter in fluid communication with said dirty slurry return conduit,
for removing particulates larger than a first predetermined size from the slurry;
a dirty slurry storage tank downstream of said first screen filter;
a second filter located downstream of said dirty slurry storage tank for removing
particulates larger than a second predetermined size from the slurry, wherein the second
predetermined size is smaller than the first predetermined size such that the second filter removes
smaller particulates than the first filter;

a clean slurry storage tank located downstream of said second filter;

an overflow relief conduit which directs overflow from the clean slurry storage tank into
the dirty slurry storage tank; and,

a clean slurry supply conduit leading from said clean slurry supply tank.

Claim 6. (currently amended) The apparatus for recycling slurry of claim 5, further comprising an overflow drain disposed within the dirty slurry storage tank supply vessel, whereby the overflow drain prevents accumulated slurry in the dirty slurry storage tank from backflowing through the overflow relief conduit.

Claim 7. (previously amended) The apparatus for recycling slurry of claim 5, wherein the clean slurry storage tank and the dirty slurry storage tank are portions of a single vessel separated by a partition having a top edge, wherein the top edge of the partition acts as the overflow relief conduit.

Claim 8. (currently amended) The apparatus for recycling slurry of claim 5 †, wherein said second filter is removable.

Claim 9. (currently amended) An The apparatus for recycling slurry used with an edge-notch polishing apparatus of claim 8, further comprising
a dirty slurry return conduit;
a first screen filter in fluid communication with said dirty slurry return conduit,
for removing particulates larger than a first predetermined size from the slurry;
a dirty slurry storage tank downstream of said first screen filter;
a second filter located downstream of said dirty slurry storage tank for removing
particulates larger than a second predetermined size from the slurry, wherein the second
predetermined size is smaller than the first predetermined size such that the second filter removes
smaller particulates than the first filter, and wherein said second filter is removable;
a slurry pump located between said dirty slurry storage tank and said second filter;
a clean slurry storage tank located downstream of said second filter;
a first valve located between the pump and the second filter, and a second valve located between the second filter and the clean slurry storage tank, whereby the removable second filter may be temporarily isolated by closing the first and second valves; and,

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a clean slurry supply conduit leading from said clean slurry supply tank.

Claim 10. (currently amended) The apparatus for recycling slurry of claim 9 †, further comprising at least one device selected from a group consisting of pH adjusters, slurry concentration adjusters, deionization units, and combinations thereof.

Claim 11. (currently amended) The apparatus for recycling slurry of claim 9 †, wherein said first filter removes particulates of at least 0.2 mm.

Claim 12. (currently amended) The apparatus for recycling slurry of claim 9 †, wherein said first filter removes particulates of at least 0.4 mm.

Claim 13. (currently amended) The apparatus for recycling slurry of claim 9 †, wherein said second filter removes particulates of at least 10 μm .

Claim 14. (currently amended) The apparatus for recycling slurry of claim 9 †, wherein said second filter removes particulates of at least 20 μm .

Claim 15. (previously amended) The apparatus for recycling slurry of claim 9, further comprising an additional filter having an inlet and outlet and valves at the inlet and outlet of the additional filter, wherein said additional filter resides in parallel to said second filter, and wherein said additional filter also removes particulates of a second predetermined size.

Claim 16. (original) A slurry recycling apparatus, comprising:
a first screen filter for removing particulates larger than about 0.4 mm from the slurry;
a dirty slurry storage tank downstream of said first screen filter for containing the slurry filtrate of the first filter;
a slurry pump downstream of said dirty slurry storage tank which provides slurry flow of at least 0.4 liters per minute at a pressure of at least 5 psi;

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a second filter located downstream of said dirty slurry storage tank for removing particulates larger than about 20 μm from the slurry;

a clean slurry storage tank located downstream of said second filter for containing slurry filtrate of the second filter;

an overflow conduit for conducting overflow slurry from the clean slurry storage tank to the dirty slurry storage tank; and

a clean slurry supply conduit leading from said clean slurry supply tank for supplying slurry to the edge-notch polishing apparatus.

Claim 17. (cancelled)

Claim 18. (cancelled)

Claim 19. (currently amended) A The process of recycling slurry used with an edge-notch polishing (ENP) apparatus, said process as in claim 18, further comprising the steps of: providing recycled slurry from an ENP operation;

filtering said slurry through a first filter and removing particulates larger than a first predetermined size from the slurry;

storing the first slurry filtrate in a dirty slurry storage tank;

pumping the slurry from the dirty slurry storage tank through a secondary filter and removing particulates larger than a second predetermined size from the slurry, wherein the second predetermined size is smaller than the first predetermined size such that the second filter removes smaller particulates than the first filter;

storing said second slurry filtrate in a clean slurry storage tank; and,

releasing slurry from the clean slurry storage tank while

directing slurry overflow from the clean slurry storage tank to the dirty slurry storage tank.

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Claim 20. (currently amended) The process of recycling slurry as in claim 19 +8, wherein the step of directing slurry overflow from the clean slurry storage tank to the dirty slurry storage tank comprises

providing a constant overflow of slurry from the clean slurry storage tank into the dirty slurry storage tank.

Claim 21. (currently amended) The process of recycling slurry as in claim 19 +7, further comprising

regularly removing and cleaning said secondary filter.

Claim 22. (currently amended) A The process of recycling slurry used with an edge-notch polishing (ENP) apparatus, said process comprising the steps of: as in claim 21,

providing recycled slurry from an ENP operation;

filtering said slurry through a first filter and removing particulates larger than a first predetermined size from the slurry;

storing the first slurry filtrate in a dirty slurry storage tank;

pumping the slurry from the dirty slurry storage tank through a secondary filter and removing particulates larger than a second predetermined size from the slurry, wherein the second predetermined size is smaller than the first predetermined size such that the second filter removes smaller particulates than the first filter;

storing said second slurry filtrate in a clean slurry storage tank;

releasing slurry from the clean slurry storage tank; and,

regularly removing and cleaning said secondary filter by

reducing the output of the slurry pump, whereby slurry is accumulated in said dirty tank;

isolating the second filter from the slurry pump and the clean tank, whereby the ENP is supplied with stored slurry from the clean tank; servicing said second filter;

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bringing the filter back in-line with the slurry pump and the clean tank; and
restoring the output of the slurry pump.

Claim 23. (currently amended) A The process of recycling slurry used with an edge-notch polishing (ENP) apparatus, said process comprising the steps of: as in claim 21,
providing recycled slurry from an ENP operation;
filtering said slurry through a first filter and removing particulates larger than a first
predetermined size from the slurry;
storing the first slurry filtrate in a dirty slurry storage tank;
filtering said slurry through a secondary filter and removing particulates larger than a
second predetermined size from the slurry, wherein the second predetermined size is smaller than
the first predetermined size such that the second filter removes smaller particulates than the first
filter;
storing said second slurry filtrate in a clean slurry storage tank;
releasing slurry from the clean slurry storage tank; and,
regularly removing and cleaning said secondary filter by alternately directing slurry flow
through one secondary filter or an additional secondary filter residing in parallel with the first
secondary filter, and removing or cleaning the filter through which no slurry is flowing.

Claim 24. (currently amended) The process of recycling slurry as in claim 19 †7,
wherein the filtering of the slurry through the first filter involves removing particulates larger
than about 0.2 mm from the slurry.

Claim 25. (original) The process of recycling slurry as in claim 24, wherein the
filtering of the slurry through the first filter involves removing particulates larger than about 0.4
mm from the slurry.

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Claim 26. (currently amended) The process of recycling slurry as in claim 19 +7, wherein the filtering of the slurry through a second filter involves removing particulates larger than about 10 μm from the slurry.

Claim 27. (original) The process of recycling slurry as in claim 26, wherein the filtering of the slurry through a second filter involves removing particulates larger than about 20 μm from the slurry.
